

Work Order ID 60980

August 3, 2010 1:51:16 PM



Page 1

Item ID: D407-667-205TRN

Revision ID:

Accept



Setup Start



Item Name: Crosstube Turning Detail

Stop



Start Date: 8/03/10 Start Qty: 1.00



Required Date: 8/10/10 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Run

Start



Stop



Approvals:

Process Plan:

H

Date: *10-08-3*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr³

D407-667-245

Rev F

100



Mori Seiki

Mori Seiki CNC Lathe Large

MORI SEIKI CNC LATHE LARGE

0.00

Memo

0.00

1-Fill tube with sand & install plugs DT8531 on both ends as per Folio FA248□2-Turn first side as per Folio FA248□3- File transition lines smooth.

Q.N. 10-08-05 ①

110



QC

Quality Control

QC1- Inspect dimensions to dimension sheet

0.00

Memo

0.00

Q.N. 10-08-05 ①

120



Mori Seiki

Mori Seiki CNC Lathe Large

MORI SEIKI CNC LATHE LARGE

0.00

Memo

0.00

1-Turn second side as per Folio FA248□2- File transition lines smooth.□3- Remove sand and plugs□4-Scribe part # and batch # using vibrating stylus as per Dwg D407-667-245 □Inside of Cuff(Donot engrave on outside of tube)

Q.N. 10-08-05 ①

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Tooling:

Date:

Run

Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Quality Control

Memo

0.00

A.M 10 - 08 - 050

140

QC8- Inspect parts - second check

0.00



QC

Quality Control

Memo

0.00

IX MB 10-08-09

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Hand Finishing Crosstubes

Memo

0.00

Ensure no sand is in the tube before alodine.

A.M 10 - 08 - 090

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Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

(1X)

Q

MB 10-08-09

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack Location: X-tube cel

(1X)

Q

MB 10-08-09

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/08/10

MF

10-8-10

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Picklist Print

August 3, 2010 1:51:20 PM

Page 1

Work Order ID: 60980

Parent Item: D407-667-205TRN

Parent Item Name: Crosstube Turning Detail



Start Date: 8/03/10

Start Qty: 1.00

Required Date: 8/10/10

Required Qty: 1.00

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec
 IPP Rev B 08.04.02 Removed polish EC verified by: DD
 IPP Rev:C 08-08-19 revE as per dwg DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6011-115

Manufactured No

120

Each

6.0000

1

1



Crosstube Material



Location

LG

Loc Qty

6

Loc Code

6

58413

0.11.10.08050

1

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DART AEROSPACE LTD		Work Order: 16980
Description: Crosstube Assembly		Part Number: D407-667-245
Inspection Dwg: D407-667-245 Rev: F		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.490	/	Caliper & mic	
	1.832	+0.005/-0.000	1.837	/		
	1.838	+0.005/-0.000	1.843	/		
	1.892	+0.005/-0.000	1.897	/		
	2.052	+0.005/-0.000	2.057	/		
	2.206	+0.005/-0.000	2.211	/		
	2.521	+0.005/-0.000	2.526	/		
	2.633	+0.005/-0.000	2.638	/		
	4.10	+/-0.030	4.10	/		
	4.978	+/-0.030	4.978	/		
	2.040	+0.000/-0.010	2.040	/		
	0.125	+/-0.010	0.125	/		
	R0.063	+/-0.010	R0.063	/		
	R0.500	+/-0.010	R0.500	/		
	2.490	+0.005/-0.000	2.490	/		
SIDE B	1.832	+0.005/-0.000	1.837	/	Caliper & mic	
	1.838	+0.005/-0.000	1.843	/		
	1.892	+0.005/-0.000	1.897	/		
	2.052	+0.005/-0.000	2.057	/		
	2.206	+0.005/-0.000	2.211	/		
	2.521	+0.005/-0.000	2.526	/		
	2.633	+0.005/-0.000	2.638	/		
	4.10	+/-0.030	4.10	/		
	4.978	+/-0.030	4.978	/		
	2.040	+0.000/-0.010	2.040	/		
	0.125	+/-0.010	0.125	/		
	R0.063	+/-0.010	R0.063	/		
	R0.500	+/-0.010	R0.500	/		
	112.91	+/-0.020	112.910	/		

Measured by: A. J.	Audited by: M.D.	Prototype Approval:	N/A
Date: 10.08.09	Date: 10-08-09	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-205)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	06.03.30	Tolerance revised for 4.978 dimension	KJ/JLM	
D	07.02.19	Dwg Rev updated	KJ/JLM	
E	09.05.20	Dwg Rev updated	KJ	

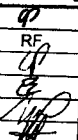
Item	QTY -245	PART NUMBER	DESCRIPTION
1	X	D407-667-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
2	1	D6011-115	CROSSTUBE
3	2	D2856-400-773	ABRASION STRIP
4	2	D2873-043	NUT PLATE
5	2	D2873-045	NUT PLATE
6	1	D2894-1	SUPPORT
7	2	D3190-1	CHAFING SHIELD
8	2	D3595-063-430	RUBBER CUSHION
9	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
10	4	MS21920-22	CLAMP
11	2	MS21920-25	CLAMP (OR MS21920-24)
12	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947- 100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6011-115
FINISHED LENGTH = 112.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-245" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 27.7 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND
6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO
PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE
SUPPORT.
NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS.
ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF
CROSSTUBE, PER QSI 035.
- 16) INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS ON BOTTOM SIDE OF CROSSTUBE
OPPOSITE D2894-1 SUPPORT.
- 17) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

60950 010-8-03
NO
WORK ORDER
WITHOUT NOTICE
SUBJECT TO AMENDMENT
UNCONTROLLED COPY
ENGINEERING
RETURN TO
SHOP COPY

RELEASED
08/11/06

F	REFORMAT NOTES TO NEW STANDARDS (ZN B8-1); RELOCATED FLAG # 6 (ZN A8-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN C6-3, C4-3 & D2-3)	RF	08.11.06
E	8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN D5-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD CL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PAR#08-21 AND ECN#1225	MB	08.07.24
D	ADD VIEW FOR OEM SKID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -851 ABRASION STRIP, ADD MAGNOBOND 6398, ADD CUSHION	PH	07.02.07
C	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.07.26
B	ADD CHAFING SHIELD	CP	03.05.21
A	NEW ISSUE	CP	02.05.13
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		DRAWING NO. D407-667-245	REV. F SHEET 1 OF 4
CHECKED		TITLE CROSSTUBE ASS'Y (407 HIGH AFT)	SCALE NTS
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APPROVED		DATE 08.11.06	
DE APPR.			

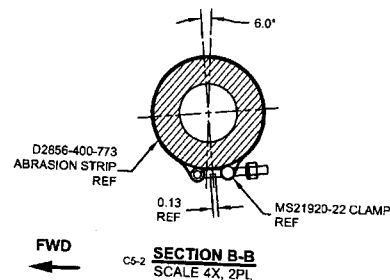
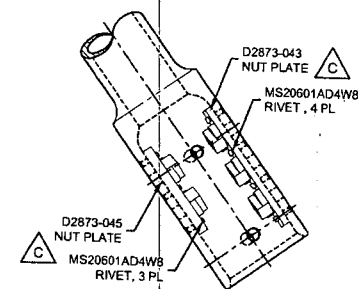
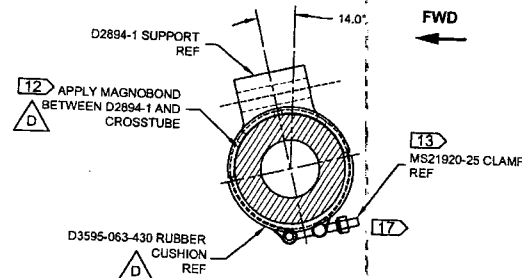
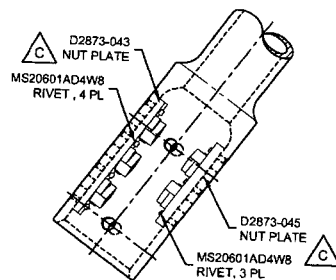
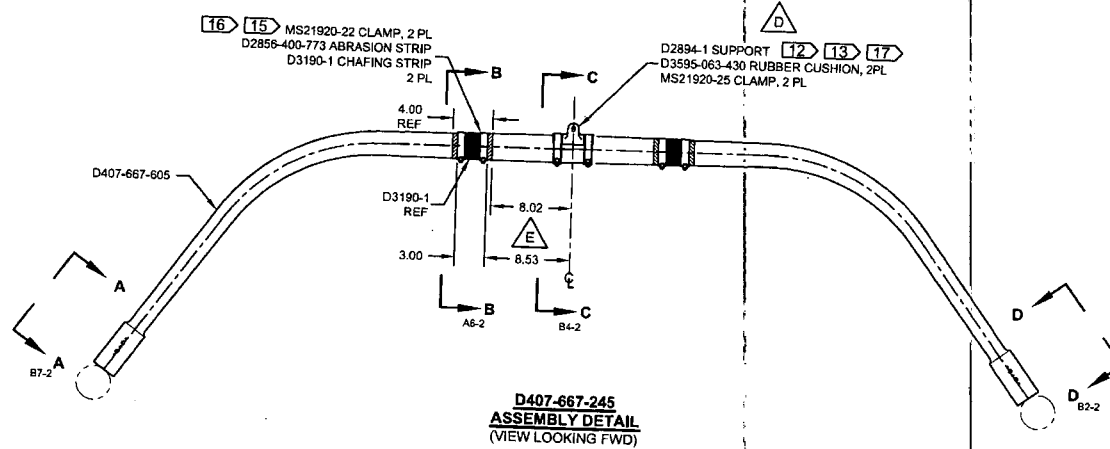
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RELEASED
08/11/06

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	18	DRAWING NO.	REV. F
MFG. APPR.	18	D407-667-245	SHEET 2 OF 4
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DE APPR.	18	CROSSTUBE ASS'Y (407 HIGH AFT)	NTS
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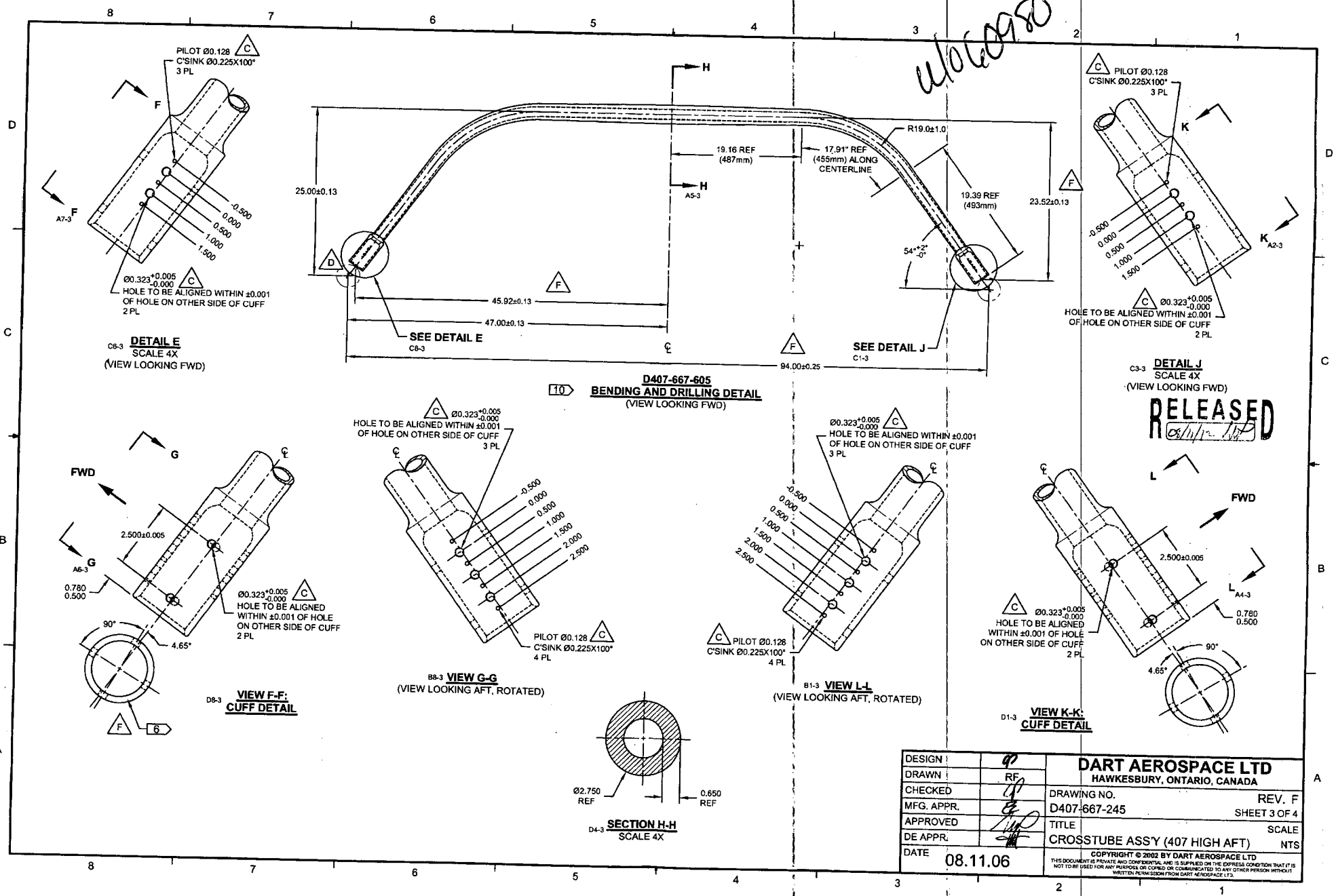
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CHECKED	48	DRAWING NO.	REV. F
MFG. APPR.	48	D407-667-245	SHEET 3 OF 4
APPROVED	48	TITLE	SCALE
DE APPR.	48	CROSSTUBE ASSY (407 HIGH AFT)	NTS
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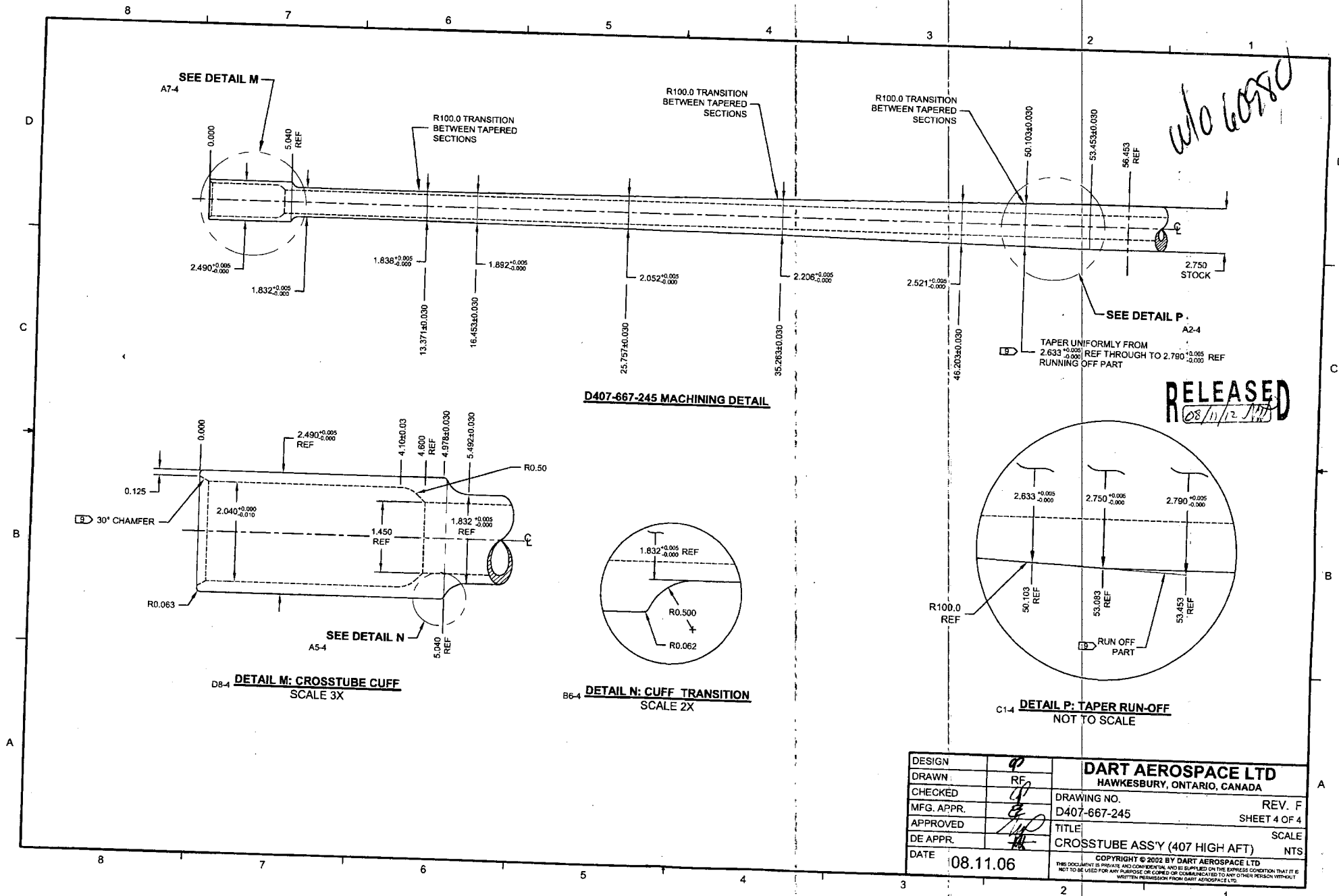
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